

### **Amendments to the Specification:**

-- The HPT1, hPEPT1, D2H, and hSI receptors were selected for cloning as GIT receptor targets based on several criteria, including: (1) expression on surface of epithelial cells in gastro-intestinal tract (GIT); (2) expression along the length of small intestine (HPT1, hPEPT1, D2H); (3) expression locally at high concentration (hSI); (4) large putative extracellular domains facing into the lumen of the GIT; and (5) extracellular domains that permit easy access and bioadhesion by targeting particles.

Receptor

## D2H

## hS1

HPT1

## hPEPT1

The following receptor domains were cloned and expressed as His-tag fusion proteins by standard techniques:

## Receptor

Domain (amino acid residues)

**SEQ ID NOS**

### hPEPT1<sup>a</sup>

391-571

16

HPT1<sup>b</sup>

29-273

15

 $\hbar S I^c$ 

272-667

14

- a Liang et al., 1995, J. Biol. Chem. 270: 6456-6463;  
 b Dantzig et al., 1994, Association of Intestinal Peptide Transport with a Protein Related to the Cadherin Superfamily;  
 c Chantret et al., Biochem. J. 285: 915-923;  
 d Bertran et al., J. Biol. Chem. 268: 14842-14949.

The receptor proteins were expressed as His-tag fusion proteins and affinity purified under denaturing conditions, using urea or guanidine HCl, utilizing the pET His-tag metal chelate affinity for Ni-NTA Agarose (Hochuli, E., Purification of recombinant proteins with metal chelate adsorbent, Genetic Engineering, Principals and Methods (J.K. Setlow, ed.), Plenum Press, NY, Vol. 12 (1990), pp. 87-98).

As indicated in WO 98/51325, phage which showed specificity to a GIT receptor was further characterized by ELISA on a variety of recombinant proteins. Phage which continued to exhibit GIT receptor specificity was sequenced. Their insert sequences are summarized as follows:

hSI	SEQ.	
	ID.NO	TARGET BINDING PHAGE INSERT SEQUENCE
S15	17.	RSGAYESPDGRGGRSYVGGGGGCGNIGRKHNLWGLRTASPACWD
S21	18.	SPRSFWPVVSRHESFGISNYLGCGYRTCISGTMTKSSPIYPRHS
S22	19.	SSSSDWGGVPGKVVRERFKGRGCGISITSVLTGKPNPCPEPKAA
Tui 40 Sni10	20.	RVGQCTDSDVRRPWARSCAHQCGAGTRNSHGCITRPLRQASAH
Sni28	21.	SHSGGMNRAYGDVFRELDRWNATSHHTRPTPQLPRGPN
Sni34	22.	SPCGGSWGRFMQGGFLGGRTDGCGAHRNRTSASLEPPSSDY
Sni38	23.	RGAADQRRGWSENGLPRVGWDAIAHNSYTFTSRRPRPP
Sni45	24.	SGGEVSSWGRVNDLCARVSWTGCCTARSARTDNKGFLPKHSSLR
SniAX2	25.	SDSDGDHYGLRGGVRCSLRDRGCGLALSTVHAGPPSFYPKLSSP
SniAX4	26.	RSLGNYGVTGTVDVTVLPMPGHANHLGVSSASSSDPPRR

SniAX6	27.	RTTTAKGCLLGSFGVLSGCSFTPTSPPPHLGYPPHSVN
SniAX8	28.	SPKLSSVGVMKVTLEPTEGPNAISIPISATLGPRNPLR

D2H

DAB3	29.	RWCGAELCNSVTKKFRPGWRDHANPSTHHRTPPPSQSSP
DAB7	30	RWCGADDPCGASRWRGGNSLFGCGLRCSAAQSTPSGRIHSTSTS
DAB10	31.	SKSGEGGDSSRGETGWARVRSHAMTAGRFRWYNQLPSDR
DAB18	32.	RSSANNCEWKSDWMRRACIARYANSSGPARAVDTKAAP
DAB24	33.	SKWSWSSRWGSPQDKVEKTRAGCGGSPSSTNCHPYTFAPPPQAG
DAB30	34.	SGFWEFSRGLWDGENRKSVRSGCGFRGSSAQGPCVTPATIDKH
DAX15	35.	SESGRCRSVSRWMTTWQTQKGGCGSNVSRGSPLDPSHQTGHATT
DAX23	36.	REWRFAGPPLDLWAGPSLPSFNASSHPRALRTYWSQRPR
DAX24	37.	RMEDIKNSGWRDSCRWGDLRPGCGSRQWYPSNMRSSRDYPAGGH
DAX27	38.	SHPWYRHWNHGDFSGSGQSRHTPPESPHPGRPNATI
DCX8	39.	RYKHDIGCDAGVDKKSSSVRGGCGAHSSPPRAGRGRGTMTVSRL
DCX11	40.	SQGSKQCMQYRTGRLTVGSEYGCGMNPARRHATPAYPARLLPRYR
DCX26	41.	SGRTTSEISGLWGWGDDRS GYGWGNTLRPNYIPYRQATNRHRYT
DCX33	42.	RWNWTVLPATGGHYWTRSTDYHAINNHRPSIPHQHPTPI
DCX36	43.	SWSSWNWSSKTTRLGDRATREGCGPSQSDGCPYNGRLTTVKPRT
DCX39	44.	SGSLNAWQPRSWVGGAFRSHANNLNPKPTMVTRHPT
DCX42	45.	RYSGLSPRDNGPACSQEATLEGCGAQRLMSTRRKGRNSRPGWTL
DCX45	46.	SVGNDKTSRPVSFYGRVSDLWNASLMPKRTPPSSKRHDDG

hPEPT1

PAX9	47.	RWPSVGyKNGSdTIDVHSNDASTKRSliYNHRRPLFP
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PAX14 48. RTFENDGLGVGRSIQKKSDRWYASHNIRSHFASMSPAGK  
 PAX15 49. SYCRVKGGGEGGHTDSNLARSGCGKVARTSRLQHINPRATPPSR  
 PAX16 50. SWTRWKGKHTHGGFVNKSPPGKNATSPYTDAQLPSDQGPP  
 PAX17 51. SQVDSFRNSFRWYEPSRALCHGCGKRDTSTTRIHNSPSDSYPTR  
 PAX18 52. SFLRFQSPRFEDYSRTISRLRNATNPSNVSDAHNNRALA  
 PAX35 53. RSITDGGINEVDLSSVSNVLENANSHRAYRKHRPTLKRP  
 PAX38 54. SSKVSSPRDPTVPRKGGNVDYGCGHRSSARMPTSALSSITKCYT  
 PAX40 55. RASTQGGRGVAPEFGASVLGRGCGSATYYTNSTSCKDAMGHNYS  
 PAX43 56. RWCEKHKFTAARCSAGAGFERDASRPPQPAHRDNTNRNA  
 PAX45 57. SFQVYPDHGLERHALDGTGPLYAMPGRWIRARPQNRDRQ  
 PAX46 58. SRCTDNEQCPDTGTRSRSVSNARYFSSRLLKTHAPHRP  
 P31 59. SARDSGPAEDGSRAVRLNGVENANTRKSSRSNPRGRRHP  
 P90 60. SSADAIEKCAGSLLWWGRQNNSGCGSPTKKHLKHRNRSQTSSSSH  
 5PAX3 61. RPKNVADAYSSQDGAAAEETSHASNAARKSPKHKPLRRP  
 5PAX5 62. RGSTGTAGGERSGVLNLHTRDNASGSGFKPWYPSNRGHK  
 5PAX7 63. RWGWERSPSDYDSDMDLGARRYATRTHRAPPVRLKAPLP  
 5PAX12 64. RGWKCEGSQAAYGDKDIGRSRGCGSITKNNTNHAHPHSHGAVAKI

# HPT-1

HAX9 65. SREEANWDGYKREMSHRSRFWDATHLSRPRRPANSGDPN  
 HAX35 66. EWYSWKRRSSKSTGLGDTATREGCGPSQSDGCPYNGRLTTVKPRK  
 HAX40 67. REFAERRLWGCDDLSWRLDAEGCGPTPSNRAVKHRKPRPRSPAL  
 HAX42 68. SDHALGTNLRSDNAKEPGDYNCCGNGNSTGRKVFNRRRPSAIP  
 HCA3 69. RHISEYSFANSHLMGGESKRKGCGINGSFSPTCPRSPTPAFRRT  
 H40 70. SRESGMWGSWWRGHRLNSTGGNANMNASLPPDPPVSTP  
 PAX2 71. STPPSREAYSRPYSVDSDSDTNAKHSSHNRRLRTRSRPN